

R E M A R K S

Objection to the Drawings

The drawings were objected to for the reasons set forth in item nos. 2 and 3 on pages 2 to 3 of the Office Action.

Fig. 17 is amended herein to replace "8C" with --8B--.
This amendment is supported on page 74, lines 1 to 5 of the specification.

Withdrawal of the objection to the drawings is respectfully requested.

Objection to the Abstract

The Abstract was objected to for the reasons indicated in item nos. 4 to 5 on pages 3 to 4 of the Office Action.

The Abstract was amended hereinabove.

Withdrawal of the objection to the Abstract is respectfully requested.

Objection to the Specification

The specification was objected to for the reasons set forth in item no. 6 on page 4 of the Office Action.

In view of the above amendments to the specification, withdrawal of the objection to the specification is respectfully requested.

Rejection Under 35 USC 112, Second Paragraph

Claims 1 to 3, 7, 10, 17 and 18 were rejected under 35 USC 112, second paragraph, for the reasons set forth in item no. 8 on pages 4 to 5 of the Office Action.

The terminology recited in original claim 1 of "installing an ultrasonic shear wave sensor...and an ultrasonic longitudinal wave sensor...or at **two** positions apart from each other in a casting direction, but at the same position in a transverse direction of the cast product means that an ultrasonic shear wave sensor and an ultrasonic longitudinal wave sensor are separately disposed at two points apart from each other in the casting direction of the continuous casting machine, but at the same position in the transverse direction of the slab, as described on page 50, lines 12 to 22 of the specification (especially page 50, lines 19 to 23) and as shown in Fig. 8. That is, the ultrasonic longitudinal wave sensor is installed at a position apart from

the ultrasonic shear wave sensor in a casting direction, but at the same position in a transverse direction of the cast product, as recited in present claim 1.

To reduce issues, the term "two" before the term "positions" was deleted from claim 1.

Claims 1 and 11 were amended to replace "the installed position" with --an installed position--.

Claims 7 and 17 were amended to delete the term "relevant." The amendments to claims 7 and 17 are supported in the specification on page 79, line 24 to page 80, line 22.

Withdrawal of the 35 USC 112, second paragraph rejection is respectfully requested.

Other Claim Amendments and New Claims

None of the newly introduced claimed subject matter, that is, a crater end computing unit that also calibrates the calculation formula (amended claims 11 and 12); a crater end arrival detecting unit (new claims 22 and 24), or a longitudinal-wave propagation time detecting unit (new claim 23) is disclosed or suggested in JP 62-148850.

These elements are advantageous for allowing the presently claimed invention to accurately detect the crater end of the slab without a troublesome calibration operation, such as driving rivets into the slab (see page 82, line 16 to page 83, line 9 of the present specification).

The calculation of the crater end computing unit is disclosed on page 43, line 10 to page 45, line 16 of the present specification (amended claim 11) and page 57, line 2 to page 59, line 16 of the present specification (amended claim 12). The crater end arrival detecting units and the function thereof are shown in Fig. 1 (represented as 11, as explained on page 33, lines 19 to 25; page 34, lines 6 to 8 and page 41, line 5 to page 42, line 7 of the present specification) (claim 22) and shown in Fig. 9 (represented as 11A, as explained on page 56, lines 4 to 15 of the present specification) (claim 24), for example. The longitudinal wave propagation time detecting unit and the function thereof are shown in Fig. 1 (represented as 12, as explained on page 33, lines 19 to 25; page 34, lines 19 to 23; and page 42, line 8 to page 43, line 9 of the present specification).

Allowable Subject Matter

Applicants are pleased to note that in item no. 13 at the top of page 8 of the Office Action, it was stated that claims 1 to 3, 7, 10, 17 and 18 would be allowable if rewritten to overcome the 35 USC 112, second paragraph rejection.

Rejection Under 35 USC 102/35 USC 103

Claims 11 to 13 were rejected under 35 USC 102 as anticipated by or, in the alternative, under 35 USC 103 as obvious over JP 62-148850 for the reasons set forth in item no. 12 on pages 6 to 7 of the Office Action.

For the reasons discussed hereinabove, it is respectfully submitted that present claims 11 and 12 patentably distinguish over JP 62-148850.

Claim 13 depends on claims 11 or 12. It is therefore respectfully submitted that claim 13 patentably distinguishes over JP 62-148850.

Withdrawal of the rejection under 35 USC 102/35 USC 103 is therefore respectfully requested.

Reconsideration is requested. Allowance is solicited.

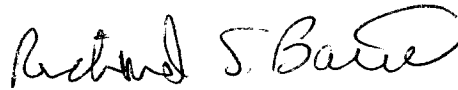
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Reply to Office Action mailed June 10, 2009

A USPTO fee of \$156 for three additional dependent claims is being paid by credit card concomitantly herewith. Any additional fees or credits are hereby authorized to be charged to Deposit Account No. 06-1378.

If the Examiner has any questions, comments, objections or recommendations, the Examiner is invited to telephone the undersigned at the telephone number given below for prompt action.

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Enc.: PETITION FOR EXTENSION OF TIME

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FIG. 16

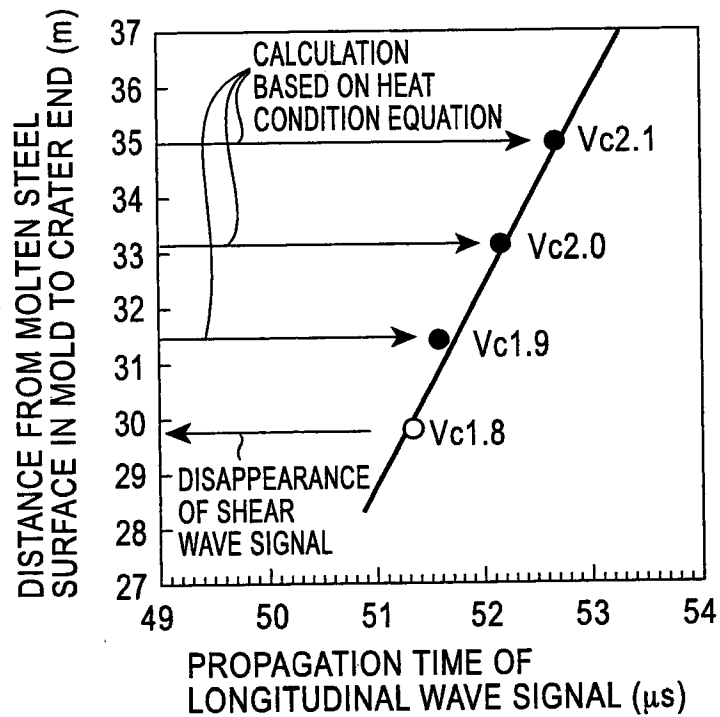


FIG. 17

